

THE LOCAL AND REGIONAL ECONOMIC IMPACTS OF THE PORT OF OAKLAND

PRESENTED TO THE
PORT OF OAKLAND
DECEMBER 10, 1991

MARTIN O'CONNELL ASSOCIATES
2938 COLUMBIA AVE. SUITE 602
LANCASTER, PA 17603 (717) 295-2428

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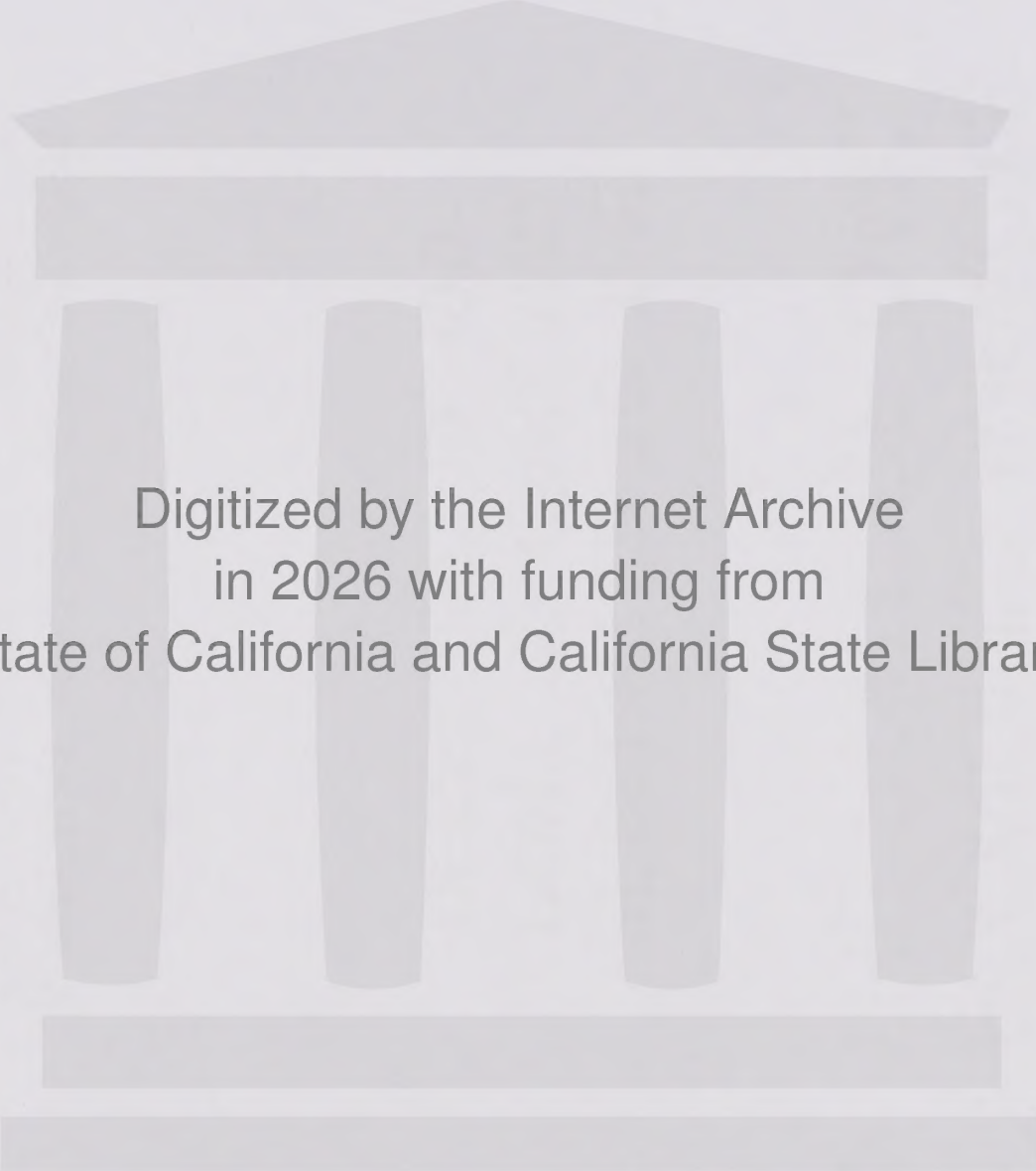
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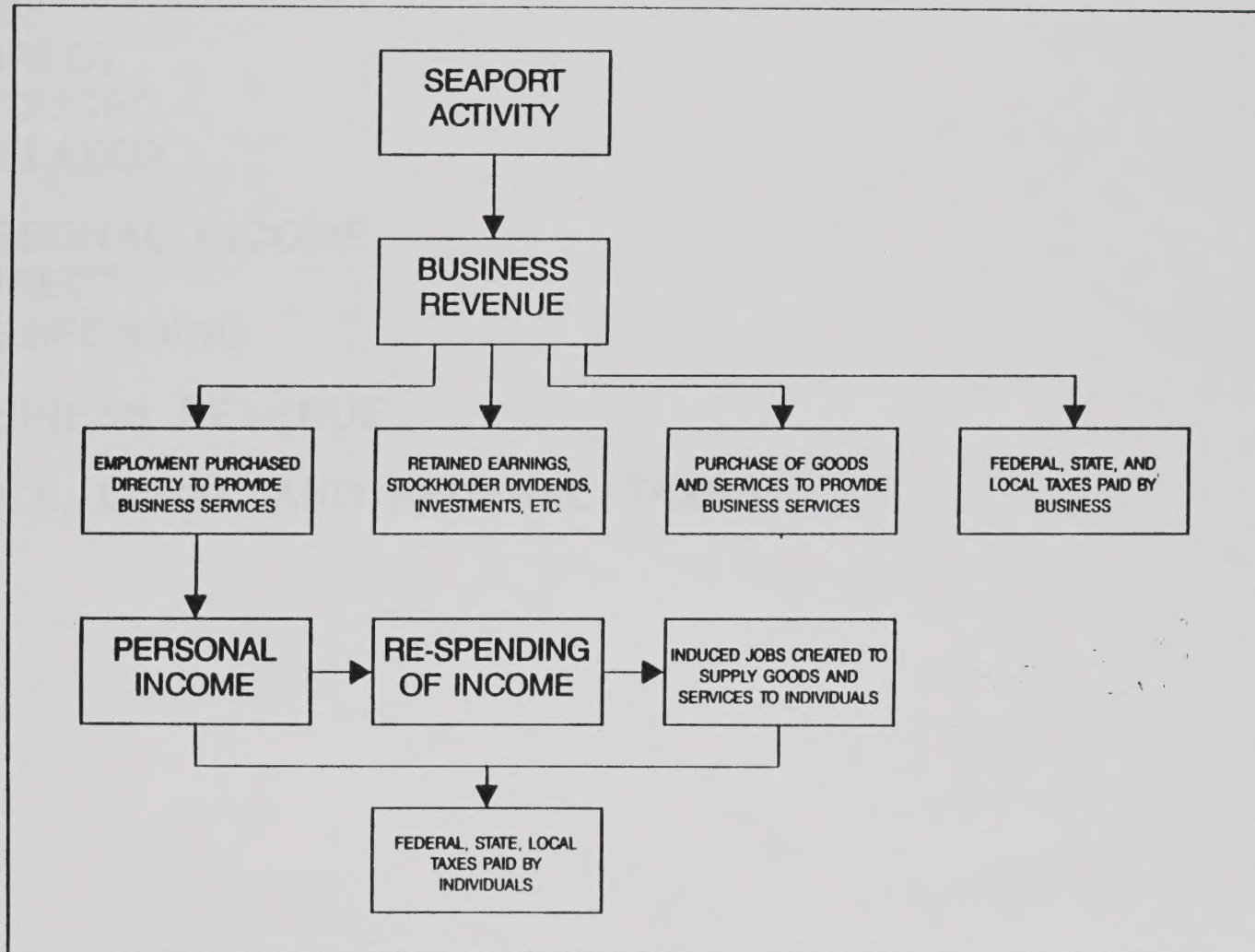
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EACH PORT IS UNIQUE - IMPACT KITS CANNOT BE USED

- COMMODITIES HANDLED
 - THROUGHPUT LEVELS
 - TYPES OF COMMODITIES
- SIZE AND TYPE OF VESSELS
- INLAND TRANSPORTATION
 - MODAL DISTRIBUTION
 - INLAND MARKETS
- LABOR
 - WORK RULES
 - PRODUCTIVITY
- LOCAL SUPPORTING INFRASTRUCTURE

HOW THE PORT OF OAKLAND IMPACTS THE ECONOMY



**THE IMPACTS OF THE ECONOMY CANNOT BE
REDUCED TO A SINGLE NUMBER**

- JOBS
 - DIRECT
 - INDUCED
 - RELATED
- PERSONAL INCOME
 - DIRECT
 - RESPENDING
- BUSINESS REVENUE
- STATE, LOCAL AND FEDERAL TAXES

THE IMPACTS ARE ESTIMATED
BY ECONOMIC SECTOR AND JOB CATEGORY

- SURFACE TRANSPORTATION
 - RAIL
 - TRUCK
- MARITIME SERVICES
 - TERMINAL WORKERS
 - LONGSHOREMEN
 - HARBOR ASSISTS
 - PILOTS
 - FORWARDERS/BROKERS
 - STEAMSHIP AGENTS/LINES
 - WAREHOUSING/TRANSLOADING
 - CONTAINER REPAIR/LEASING
 - CHANDLERS/SURVEYORS/BUNKERING
 - SHIP REPAIR/MARINE CONSTRUCTION
 - BARGE OPERATIONS
 - GOVERNMENT
- PRIVATE TERMINAL OPERATOR
- PORT OF OAKLAND
- BANKING/INSURANCE/LEGAL

IMPACTS ARE ESTIMATED BY

- HANDLING TYPE
 - DRY CONTAINERIZED CARGO
 - REFRIGERATED CONTAINERIZED CARGO
 - TRANSLOADS
 - BREAK BULK (SPECIFIC COMMODITY)
- GEOGRAPHIC DETAIL:
 - CITY
 - COUNTY
 - STATE

SEAPORT DATA COLLECTION EFFORT

- IDENTIFICATION OF MARITIME PARTICIPANTS (DIRECT IMPACTS)
 - PORT OF OAKLAND
 - PACIFIC SHIPPER'S "COAST MARINE AND TRANSPORTATION DIRECTORY"
 - JOC PORT TICKLER
- IDENTIFICATION OF USERS (RELATED JOBS)
 - PORT OF OAKLAND
- LOCAL ECONOMIC DATA (INDUCED JOBS)
 - BUREAU OF LABOR STATISTICS, CONSUMER EXPENDITURE SURVEY
 - U.S. BUREAU OF CENSUS, STATE AND SMSA LEVEL DATA
 - ✓SURVEY OF RETAIL TRADE
 - ✓SURVEY OF WHOLESALE TRADE
 - ✓SURVEY OF SERVICE INDUSTRIES
 - ✓SURVEY OF CONSTRUCTION

387 INTERVIEWS WERE CONDUCTED

CATEGORY	INTERVIEWS CONDUCTED
FREIGHT FORWARDERS	97
NVOCC'S	22
WAREHOUSE/CFS	45
STEAMSHIP AGENCIES/LINES	42
TERMINAL OPERATORS/STEVEDORES	7
RAILROADS	4
CHANDLERS	3
TUG ASSISTS	11
TRUCKING	11
MISCELLANEOUS	6
CONTAINER LEASING	6
SHIP REPAIR	3
CRANE REPAIR	1
CONTAINER REPAIR	2
DREDGING CONTRACTOR	4
MARINE EQUIPMENT	4
MARINE SURVEYORS	5
ATTORNEYS	9
BANKS	22
GOVERNMENT/MILITARY	9
EXPORTERS/IMPORTERS	74
TOTALS	387

DIRECT IMPACT METHODOLOGY

- **DIRECT JOB IMPACTS ESTIMATED DIRECTLY FROM SURVEY**
 - **CUSTOMHOUSE BROKERS/FORWARDERS**
 - **AGENTS AND SHIPPING LINES**
 - **SURVEYORS/CHANDLERS/BUNKERING**
 - **WAREHOUSE/CONTAINER REPAIR AND LEASING**
 - **TERMINAL OPERATORS**
 - **GOVERNMENT**
 - **PORT OF OAKLAND**
 - **BANKING/INSURANCE/LEGAL**
 - **LINE HAUL BARGE OPERATION**

DIRECT IMPACT METHODOLOGY

(CONTINUED)

- LONGSHOREMEN MODULE (COMMODITY SPECIFIC)
 - CONTAINERS, UNITS, TONS PER GANG HOUR
 - GANG SIZE
 - REVENUE PER CONTAINER, UNIT, TON
- TOWING MODULE
 - TUGS PER VESSEL TYPE
 - SHIFTS AND PERSON HOURS PER TUG
 - HOURS PER CREWMAN PER YEAR
 - REVENUE PER ASSIGNMENT
- PILOT MODULE
 - PILOT ASSIGNMENTS PER VESSEL TYPE
 - ASSIGNMENTS PER YEAR PER PILOT
 - REVENUE PER ASSIGNMENT

DIRECT IMPACT METHODOLOGY

(CONTINUED)

- RAIL MODULE

- MODAL SPLIT BY COMMODITY
- CONTAINERS, UNITS, TONS PER RAIL CAR
- RAIL CARS PER UNIT TRAIN
- CREW CHANGES FOR TYPICAL RAIL MOVE
- CREWMEN PER SHIFT
- SHIFTS WORKED PER YEAR PER CREWMEN
- RATIO OF ADMIN AND SUPPORT TO CREWMEN
- REVENUE PER CONTAINER, UNIT, OR TON

- TRUCK MODULE

- MODAL SPLIT BY COMMODITY
- CONTAINERS, UNITS, TONS PER TRUCK TRIP
- TRIPS PER DAY
- TRIPS PER YEAR PER DRIVER
- RATIO OF SUPPORT PER DRIVER
- REVENUE PER CONTAINER, UNIT, OR TON

- WAREHOUSE/TRANSLOADING MODULE

- PERCENT LCL
- PRODUCTIVITY FOR STUFFING/STRIPPING
- PERCENT TRANSLOAD (DRY AND REEFER)
- PRODUCTIVITY FOR TRANSLOADING
- REVENUE PER BOX TRANSLOADED OR STUFFED/STRIPPED

INDUCED JOB IMPACT

- STATE PERSONAL INCOME MULTIPLIER
- CONSUMER EXPENDITURE PATTERNS
 - OAKLAND-SPECIFIC
 - MEDIUM INCOME SCENARIO
- RATIO OF JOBS TO SALES IN SUPPLYING INDUSTRIES
 - RETAIL LEVEL
 - WHOLESALE LEVEL

RELATED PORT JOBS

- SURVEY OF SHIPPERS/CONSIGNEES USING THE PORT
 - JOBS AT FACILITY
 - CONTAINERS, UNITS, TONS SHIPPED BY WATER
- JOBS/CONTAINER AND JOBS/TON RATIOS DEVELOPED FOR LOCAL USERS
- RATIOS MULTIPLIED BY LOCAL THROUGHPUT VIA OAKLAND
- RELATED JOBS ARE RELATED, NOT PORT GENERATED
 - EXPORT/IMPORT DEMAND DETERMINES LEVELS
 - OTHER PORTS CAN BE USED

INCOME IMPACTS

- DIRECT INCOME

- DIRECT JOBS* AVERAGE SALARY

- RESPENDING:

- STATE INCOME MULTIPLIER

- CONSUMPTION PATTERNS
FOR PORT OF OAKLAND

REVENUE IMPACTS

- RATIO OF SALARY TO REVENUE
 - AGENTS
 - FREIGHT FORWARDERS & CUSTOMHOUSE BROKERS
 - SURVEYORS/CHANDLERS
 - CONTAINER REPAIR/LEASING & WAREHOUSING
- MODELS
 - RAIL
 - TRUCK
 - LONGSHOREMEN/TERMINAL OPERATORS
 - PILOTS
 - TOWING
 - WAREHOUSING
- ANNUAL REPORTS

SUMMARY OF IMPACTS

SUMMARY OF PORT OF OAKLAND IMPACTS		
	JOBS	MILLIONS OF DOLLARS
EMPLOYMENT IMPACTS		
DIRECT JOBS	6,692	
INDUCED JOBS	2,859	
RELATED PORT USERS	179,300	
TOTAL DIRECT, INDUCED AND RELATED JOBS	188,851	
PERSONAL INCOME IMPACT		\$430.1
BUSINESS REVENUE IMPACTS		\$729.2
STATE AND LOCAL TAXES		\$38.3
PORT OF OAKLAND PAYMENTS TO THE CITY		\$6.6

**\$729.2 MILLION OF BUSINESS REVENUE
WAS GENERATED BY PORT OPERATIONS**

IMPACT SECTOR	REVENUE (MILLIONS)	PERCENT OF TOTAL
SURFACE TRANSPORTATION	\$376.1	51.58%
MARITIME SERVICES	\$309.1	42.39%
PORT OF OAKLAND	\$36.8	5.05%
BANKING/INSURANCE	\$7.2	0.99%
TOTALS	\$729.2	100.00%

REFRIGERATED CONTAINERS GENERATE THE GREATEST REVENUE IMPACT PER UNIT

COMMODITY GROUP	REVENUE (MILLION\$)	REVENUE PER CONTAINER	REVENUE PER METRIC TON
CONTAINERS: DRY	\$596.4	\$996	NA
CONTAINERS: REFRIGERATED	\$92.2	\$1,440	NA
BREAK BULK	\$12.2	NA*	\$32
ALLOCATED REVENUE	\$700.8		
REVENUE NOT ALLOCATED BY COMMODITY	\$28.4		
TOTAL REVENUE	\$729.2		

* Not applicable

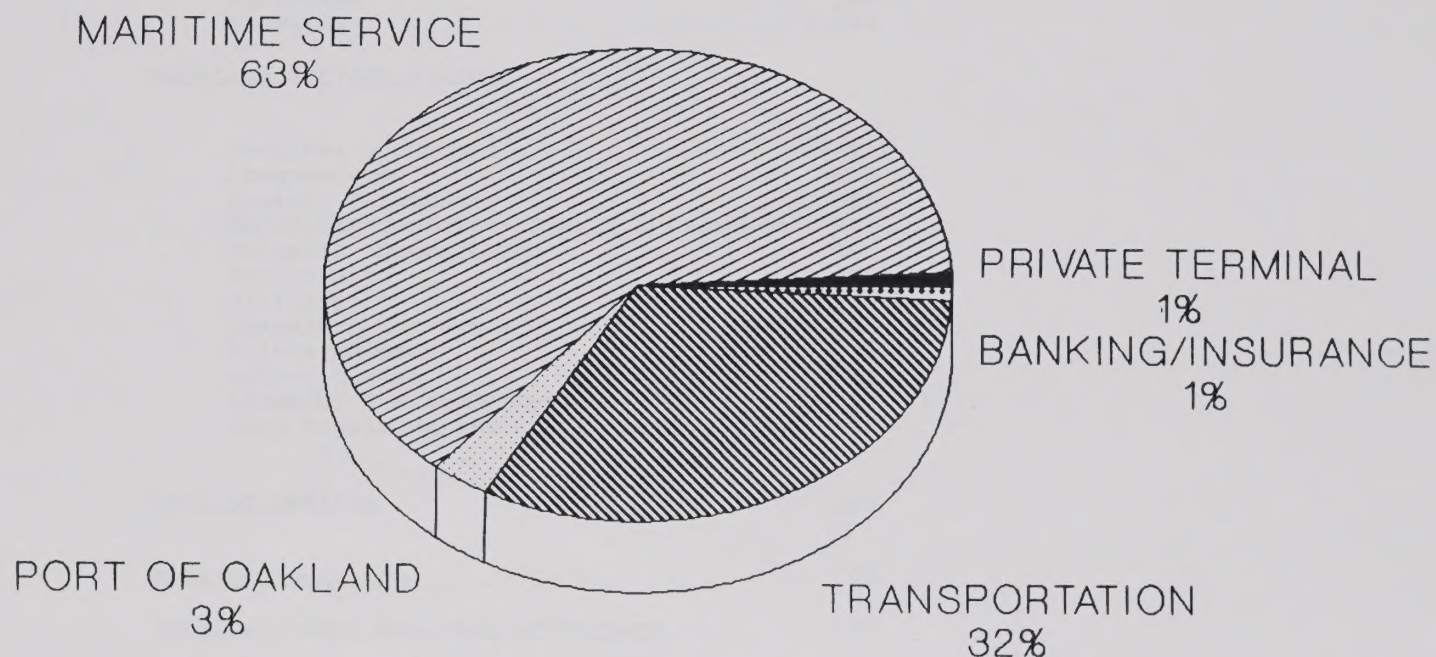
**MORE THAN \$38 MILLION OF STATE
AND LOCAL TAXES WERE GENERATED**

JURISDICTION	MILLIONS OF DOLLARS
STATE TAX IMPACTS	\$22.6
COUNTY TAX IMPACTS	\$5.8
LOCAL TAX IMPACTS	\$9.9
TOTAL STATE AND LOCAL TAX IMPACTS	\$38.3

INCOME IMPACT

- DIRECT PERSONAL INCOME - \$220.5 MILLION
- PERSONAL INCOME MULTIPLIER- 1.95
- TOTAL INCOME IMPACT - \$430.1 MILLION

DISTRIBUTION OF JOB IMPACTS *BY ECONOMIC SECTOR*



DIRECT JOB IMPACTS

BY ECONOMIC SECTOR

ECONOMIC SECTOR AND
BUSINESS CATEGORY

DIRECT EMPLOYMENT

Surface Transportation

Railroads	566
Trucking	1,546

Maritime Service Sector

Terminal Operators	411
Longshoremen	572
Freight Forwarders *	558
Warehouse/Container Repair & Leasing**	947
Shipping Agents/Lines	472
Government	157
Military***	836
Chandlers/Surveyors	30
Pilots/Support	13
Harbor Assist	32
Linehaul Towing/Bunkering	27
Ship Repair/Marine Construction	148

<u>Port of Oakland</u>	202
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<u>Banking/Insurance</u>	75
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<u>Port Dependent Exporters/Importers</u>	100
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<u>TOTAL</u>	<u>6,692</u>
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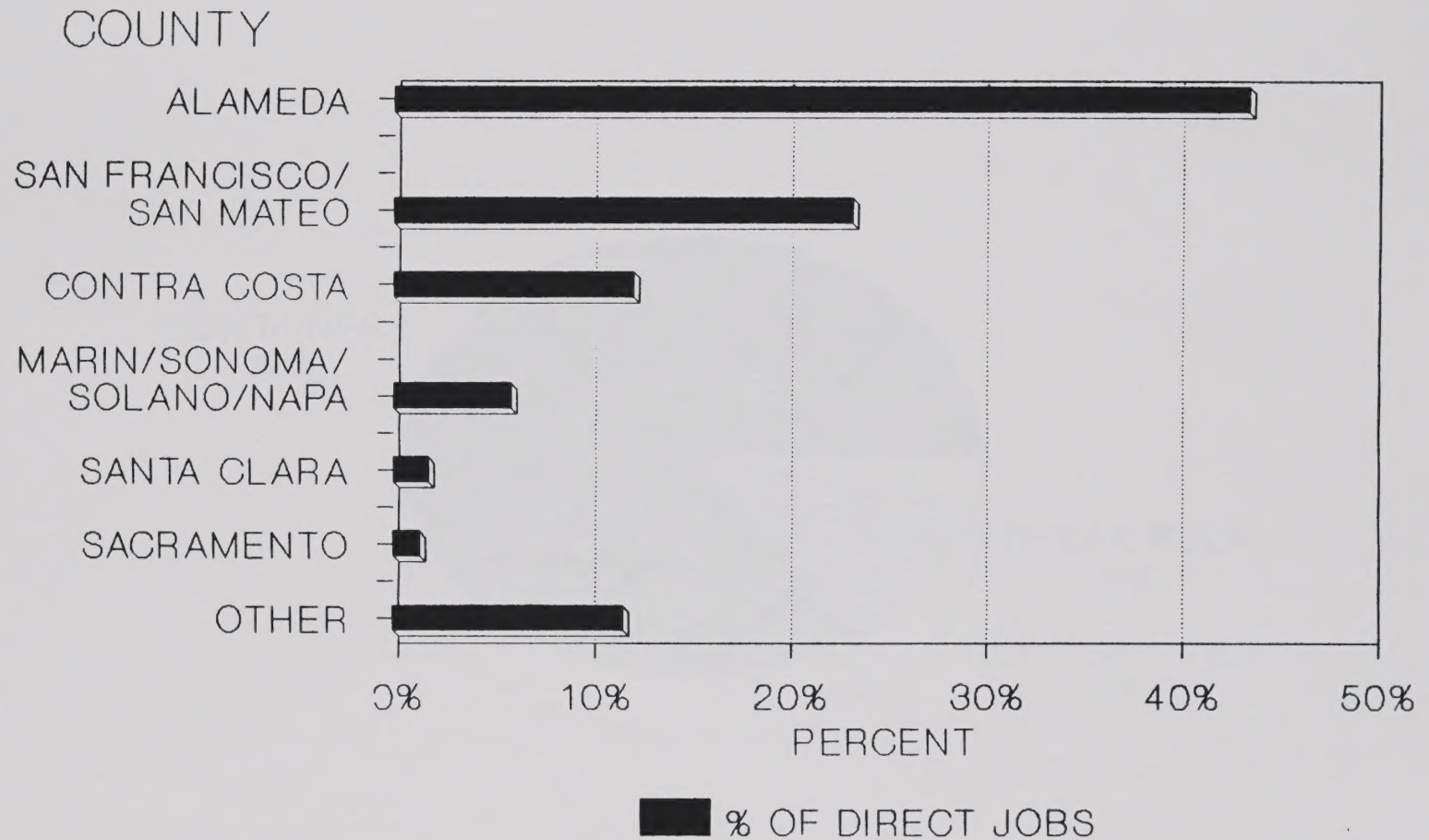
Note: This table does not include related exporters and importers because jobs with those firms are included within the related jobs category, as described in another section of this chapter.

* Includes customshouse brokers and third party carriers

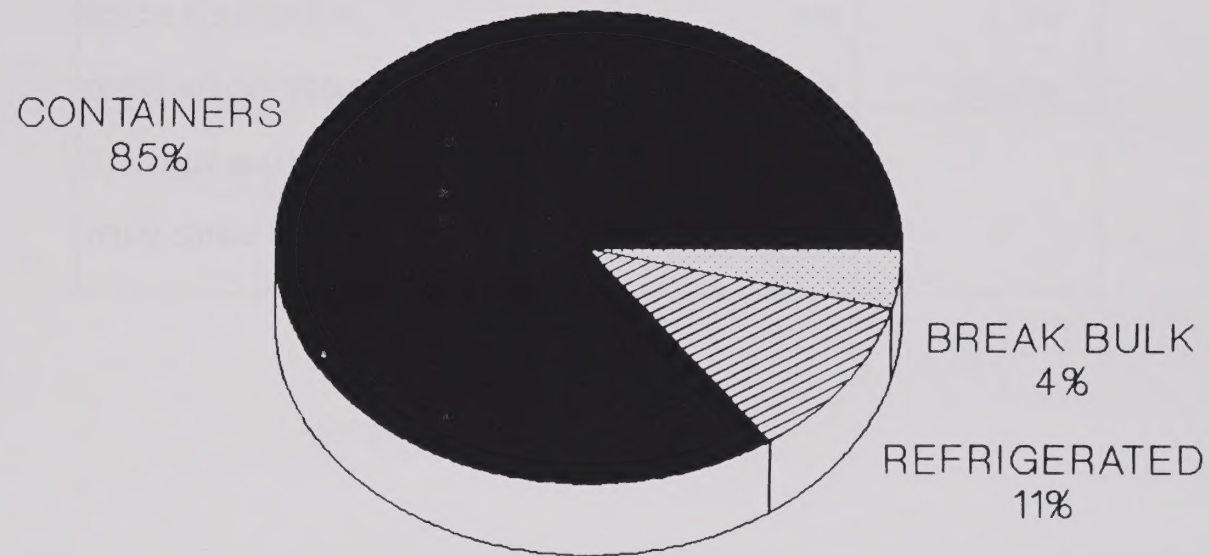
** Includes CFS and transloading operations

***Includes Army, Navy, Coast Guard and Army Corps of Engineers

DIRECT JOB IMPACT *BY COUNTY OF RESIDENCE*



DIRECT JOB DISTRIBUTION *BY COMMODITY*



DIRECT JOB DISTRIBUTION **BY COMMODITY**

COMMODITY GROUP	DIRECT JOBS	PERCENT OF ALLOCATED JOBS
CONTAINERIZED CARGO: DRY	4,656	85.03%
CONTAINERIZED CARGO: REFRIGERATED	592	10.81%
BREAK BULK CARGO	228	4.16%
TOTAL ALLOCATED JOBS	5,476	100.00%
JOBS NOT ALLOCATED BY COMMODITY	1,216	
TOTAL DIRECT JOBS	6,692	

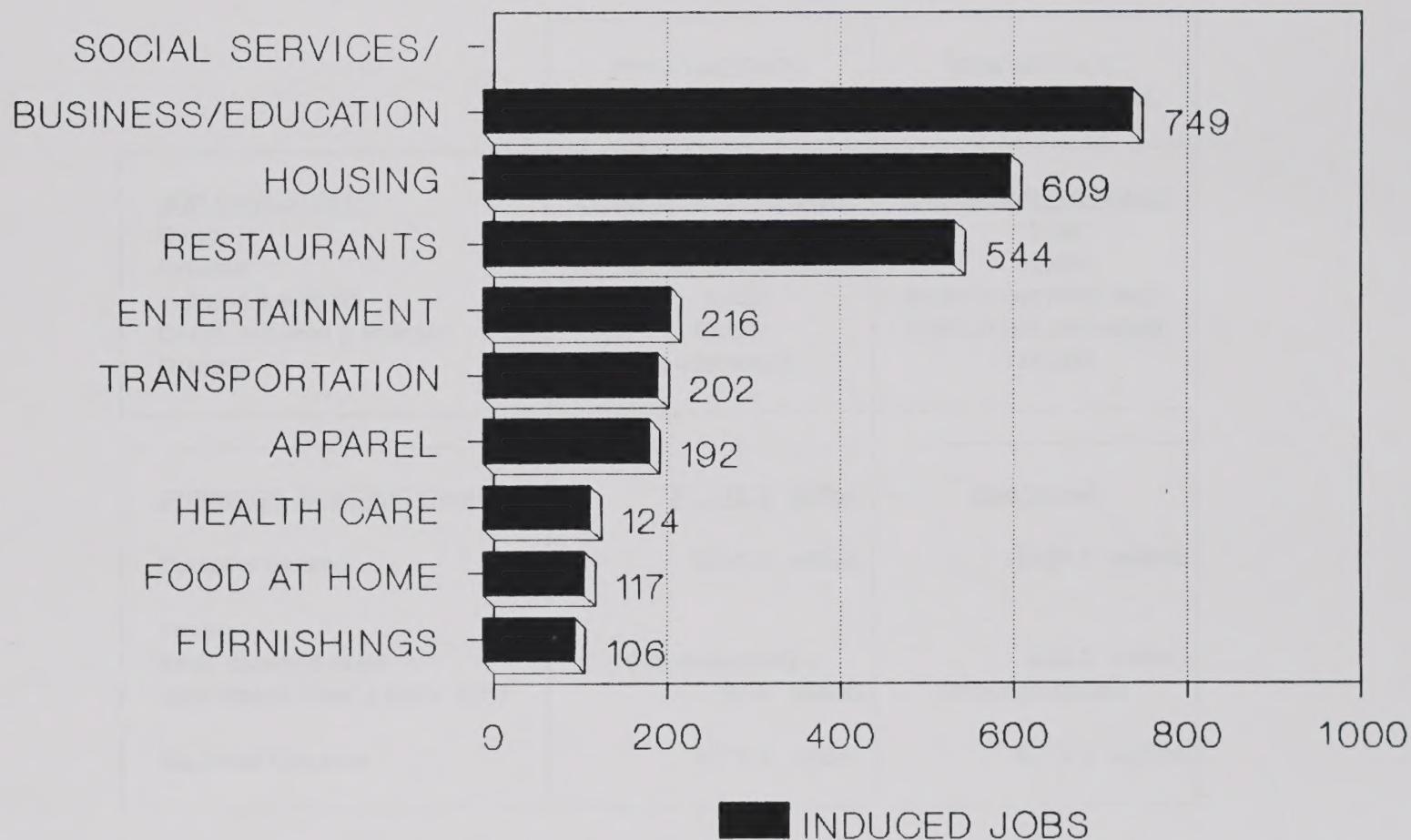
**REFRIGERATED CONTAINERS GENERATE
THE GREATEST IMPACT PER 1000 CONTAINERS**

COMMODITY GROUP	JOBS PER 1000 CONTAINERS	JOBS PER 1000 TONS
CONTAINERS: DRY	7.8	NA
CONTAINERS: REFRIGERATED	9.3	NA
BREAK BULK	NA*	0.74

* NOT APPLICABLE

DISTRIBUTION OF INDUCED JOBS

INDUSTRY



COMPARISON OF RESULTS

	PRIOR METHOD PORT OF OAKLAND	NEW METHOD MARTIN O'CONNELL
<u>JOB CATEGORIES</u>	<u>Employment Generated</u>	<u>Employment Generated</u>
Direct	4,454	6,692
Induced	(not able to be estimated)	2,859
Induced & Indirect	8,435	(indirect not estimated)
Direct, Induced & Indirect	12,889	(indirect not estimated)
Related	(not estimated)	179,300
<u>BUSINESS REVENUE (Total)</u>	<u>\$1,172.9 million</u>	<u>(see below)</u>
Personal Income	\$294.5 million	\$430.1 million
Taxes		
local, county & state	(not estimated)	\$38.3 million
local (sales, hotel & utility only)	\$2.5 million	(included above)
Business Revenue	\$875.9 million	\$729.2 million

HOW THE STUDY RESULTS CAN BE USED BY THE PORT OF OAKLAND

- ESTIMATE THE IMPACTS OF HARBOR DREDGING
- ESTIMATE IMPACT OF FUTURE THROUGHPUT
- ESTIMATE IMPACT OF NEW CARRIERS
- EVALUATE PORT SPECIFIC PROJECTS AND OPERATIONAL CHANGES
- RANK ALTERNATIVE PROJECTS AND PORT PLANS
- COMPARE WITH NON-MARITIME INVESTMENT PROJECTS
- FINANCING JUSTIFICATIONS
- IMPACT OF INTERMODAL CHANGES
- IMPACT OF CHANGES IN PORT HINTERLAND
- PUBLIC RELATIONS

SENSITIVITY MODEL

- THE MODEL ESTIMATES THE SENSITIVITY OF IMPACTS TO CHANGES IN:
 - THROUGHPUT LEVELS BY HANDLING TYPE
 - COMMODITY MIX
 - LABOR PRODUCTIVITY
 - MODAL DISTRIBUTION, BY COMMODITY/HANDLING TYPE
 - HINTERLAND
 - HARBOR DEPTH
 - LABOR AGREEMENTS
 - VESSEL SIZE
 - NEW FACILITY CONSTRUCTION
 - INTERMODAL FACILITIES DEVELOPMENT
 - GOVERNMENT POLICIES

SUMMARY OF PORT OF OAKLAND IMPACTS SENSITIVITY ANALYSIS		
EMPLOYMENT IMPACTS	JOBS	
	BASELINE	10% LOSS
	DIRECT JOBS	6,692
	INDUCED JOBS	6,511
	RELATED PORT USERS	2,777
		163,561
	MILLIONS OF DOLLARS	
	BASELINE	10% LOSS
PERSONAL INCOME IMPACT	\$430.1	\$417.7
BUSINESS REVENUE IMPACTS	\$729.2	\$684.4
STATE AND LOCAL TAXES	\$38.3	\$37.3

Seattle, WA

- Transportation Terminal Command Far East is headquartered in Seoul, Korea and manages MTMC activities in the Far East. This command reports directly to MTMC Western Area Headquarters in Oakland during peacetime
- MTMC Western Area also oversees the operations of ten Military Air Traffic Coordinating Units.

Also, the Military Sealift Command, Pacific Headquarters is located in Oakland, as is the U.S. Navy Supply Center.

3.3 Exporters/Importers Sectors

Businesses export and import cargo through the Port of Oakland for manufacturing purposes, for distribution to wholesale and retail outlets, as well as for other business purposes.

As described in section 2, two types of exporters and importers are considered in this analysis: Those that are totally dependent on the Port of Oakland and maintain private terminals at the Port, and those located throughout the Bay Area whose business is only related to the Port of Oakland.

Those in the first category would most likely shut down operations if the Port of Oakland were not available for their use, while those in the second category would ship or receive materials via another port. Because of this difference, employment, revenue, income and tax impacts are estimated for port users in the first category only. Employment with port users in the second category is considered port-related, and not port-generated. For this group, no income, revenue and tax impacts are estimated.

3.4 Port Sector

The Port of Oakland includes those individuals employed whose purpose is to oversee port activity and support the Port's maritime operations. The Port designs, constructs and maintains the seaport facilities. In addition, the Port provides preferentially assigned facilities to steamship lines, as well competitive multi-user public facilities for steamship lines that prefer to use public terminals.

3.5 Banking and Insurance Sector

While this sector is not directly involved in cargo or ship operations, it nonetheless does provide services such as financing export/import transactions and insuring cargo and vessels. Included in this sector are banks providing international trade financial transactions, such as the issuance of letters of credit, legal firms specializing in maritime law, and insurance firms providing hull and cargo insurance.

4. COMMODITIES INCLUDED IN THE ANALYSIS

A major use of an economic impact analysis is to provide a tool for port development planning. As a port grows, available land and other resources for port facilities become scarce, and decisions must be made as to how to develop the land and utilize the resources in the most efficient manner. Various types of facility configurations are associated with different commodities. For example, a container terminal requires a large, paved area for storage, and the size of the back up space required is determined by the type of terminal operations. For example a stacked container operation compared to a wheeled operation requires less back-up space. Handling equipment differs as well, with containerized cargo requiring specialized, highly automated cranes. Refrigerated containers require electrical hook-ups and transloading facilities. Investments in these facilities is very costly, and there is often a need for the Port to demonstrate the pay-offs of these investments in terms of economic benefits.

An understanding of a commodity's relative economic value in terms of employment and income to the local community, the cost of providing the facilities, and the relative demand for the different commodity groups is essential in making future port development plans. Because of this need for understanding relative commodity group impacts, economic impacts are estimated for the following commodity groups handled via public facilities and one private facility at the Port of Oakland:

- . Containerized cargo - Dry
- . Containerized Cargo - Refrigerated
- . Break bulk cargo, including steel products, yachts, military vans, and heavy lift project cargo

It should be emphasized that commodity-specific impacts are not estimated for each of the five economic sectors described in the last section. Specific impacts could not be allocated to individual commodity groups with any degree of accuracy for the banking and insurance sector, marine construction and the government sector. In addition, taxes have not been displayed by specific commodity, since these tax impacts will reflect the same distribution over commodities as the employment impact.

5. DATA COLLECTION

This Economic Impact Study of the Port of Oakland is based on a telephone survey of 387 different businesses within the maritime community at the Port of Oakland. The participants were identified from the Port of Oakland, Journal of Commerce's "Telephone Tickler", and the Pacific Shipper's "Coast Marine and Transportation Directory".

Key areas of interest included in the telephone survey are:

- . Name of company
- . Respondent's name and position
- . Number of full time individuals totally dependent upon the Port of Oakland
- . Percent of Bay Area business that is generated by cargo moving over the Port of Oakland facilities
- . Average salary (excluding benefits)
- . Payroll as a percent of revenue.
- . Percent LCL and percent transload
- . Tonnage per dry container and refrigerated container
- . Modal split for each commodity
- . Local expenditures

In addition to data collected from the 387 interviews, published data was collected from several sources. These publications are for the Oakland Standard Metropolitan Statistical Area and the state of California, and include the following U.S. Bureau of Census Publications:

- . Census of Wholesale Trade, 1987 published in 1989.
- . Census of Retail Trade, 1987 and published in 1989.
- . Census of Construction, 1987, and published in 1990.
- . Census of Service Industries, 1987 and published in 1989

Other published data included U.S. County Business Patterns, 1987 for the state of California, 1987 and published in 1989 and U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 1989.

Table A-1 summarizes the interview responses.



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